



Recycling Attitudes of Prospective Special Education Teachers

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ABSTRACT

Recycling applications and research on this subject are increasing and gaining importance due to their enormous potential in solving many environmental problems. This study, which was conducted to determine the attitudes of special education teacher candidates towards the environment and to determine whether these attitudes are different according to gender, age and class variables, is a Descriptive Single Survey Model. The study group of the research consists of a total of 120 special education teacher candidates (90 girls, 30 boys) studying at a state university in Turkey. According to the results of the research, when the mean attitudes of the pre-service teachers towards the recycling are evaluated according to their grade levels, it is seen that the attitude scores of the pre-service teachers studying in the 3rd and 4th grades are slightly higher than the averages of the candidates studying in the 1st and 2nd grades. However, when the scores of attitudes towards the recycling are evaluated according to the age variable, it is seen that the scores of attitudes towards the recycling increase as the age of the teacher candidates increases.

Keywords: Prospective teachers, Recycling, Attitude, Special Education.

INTRODUCTION

Recycling applications and research on this subject are increasing and gaining importance due to their enormous potential in solving many environmental problems [1]. At the end of the literature review, it was seen that recycling attitude researchers tend to focus on the attitudes of the public, households and students. In most of these studies, the public and households were evaluated as working groups, and most of the existing tools in the literature were developed by researchers to measure the attitudes of the public and households towards recycling [2]. Also, most of the research has been done by science and environmental educators to determine students' attitudes towards various recycling practices [3].

Attitudes influence individual behaviour, particularly action choice and decision making. For example, individuals with high scientific literacy tend to make more appropriate decisions and appear more knowledgeable. Studies have also confirmed the relationship between socio-scientific issues and scientific literacy [4]. From this point of view, it is important to examine the attitudes of all educators and teacher candidates [5].

Special Education Teaching in Turkey

The year 1950 is considered a turning point in terms of special education services in Turkey. Special education services became one of the formal education institutions by being connected to the Ministry of National Education with the law no. 5822 in 1951. In 1952, the Department of Special Education was opened in Gazi Education Institute in order to train personnel to serve individuals with special needs in Turkey. Persons who graduated from teacher schools and taught for at least three years were selected and included in this section. But this department was closed by the Ministry of National Education after two years of education. These studies started again with the faculty of education opened at Ankara University in 1964. The second attempt to train special education teachers is the one-year Special Education Certificate programs, which were started in 1979 for teachers working in special education schools in cooperation with the Ministry of National Education and Ankara University [6].

The first program that trains undergraduate teachers in the field of special education in Turkey is the four-year "Special Education Teaching" program, which was opened at Anadolu University Faculty of Education in the 1983-1984 academic year. The Special Education Program had its first graduates in 1986-1987. Later, this program was closed and teachers were started to be trained in the programs for the Hearing Impaired and Mentally Impaired within the education faculty. This development was followed by the establishment of the Special Education Department in Gazi Educational Sciences

Department in 1987. Thus, teachers have been started to be trained in the fields of Visually Impaired and Mentally Handicapped within Gazi University [6]. Since 2016, all programs have been combined under the name of "Special Education Teaching" and teachers have been started to be trained in this field [7].

METHODS

Model

This study, which was conducted to determine the attitudes of special education teacher candidates towards the environment and to determine whether these attitudes are different according to gender, age and class variables, is a Descriptive Single Survey Model [8].

Study Group

The study group of the research consists of a total of 120 special education teacher candidates (90 girls, 30 boys) studying at a state university in Turkey in the fall semester of the 2014-2015 academic year. The distribution of these students, who make up the study group, according to their grade level and age is presented in Table 1 and Table 2, respectively.

Table 1. Distribution of Teacher Candidates According to Gender and Class Levels

		Class								Total	
		1		2		3		4			
		f	%	F	%	f	%	f	%	f	%
Gender	G	20	17,6	16	12,7	18	14,1	26	16,9	90	75
	B	7	3,5	9	6,3	6	1,4	8	2,1	30	25
Total		30	21,1	27	19,0	22	15,5	27	19,0	120	100.0

Table 2. Distribution of Teacher Candidates According to Ages

Yaş	17	18	19	20	21	22	23	24	25	26	Toplam
f	2	12	22	27	16	18	9	7	6	1	120
%	1,4	8,5	15,5	23,9	11,3	19,7	9,9	4,9	4,2	0,7	100

Data Collection Tool

In this study, a scale developed by Ugulu[1] was used to determine the attitudes of pre-service special education teachers towards the recycling. The RAS consisted of three subscales and 21 items with responses recorded on a four-point Likert scale, options ranging from strongly agree to strongly disagree. As a result of the validity and reliability analyzes performed on the scale for this study, it was seen that the scale had 3 sub-dimensions. Considering the results obtained from the pre-service teachers in the study group, the consistency between the items for these three dimensions was re-examined and the Cronbach's alpha reliability coefficient of the "Attitudes Toward Recycle" sub-dimension (6 items) was 0.83, and the reliability coefficient of the "Attitudes Toward Reduce and Reuse" sub-dimension (9 items) was 0.75, and the reliability coefficient of the "General Recycling Attitude" sub-dimension (6 items) was 0.73. As a result of the reliability studies on the whole scale, Cronbach's alpha reliability coefficient of the scale was determined as 0.85. In addition, in the personal information form part of the test, there are questions about the independent variables of the research such as the name, surname, age, gender and class of the participants.

Data Analysis

The data obtained from the RAS were transferred to the computer environment and analyzed with the SPSS 24.00 package program. Whether the prospective teachers' attitudes towards the recycling show a significant difference in terms of the independent variables of the research was investigated using the t-test for bivariate features and the ANOVA (One-Way Analysis of Variance) test for features with more than two variables. If there was a significant difference between the groups as a result of the ANOVA test, the source of the difference was determined by the Scheffe test.

RESULTS

It is important for effective environmental education to determine the attitudes of teachers and teacher candidates towards recycling and the variables that affect these attitudes. In this context, in line with the determined research purpose, the average scores obtained by the special education teacher candidates from the Recycling Attitude Scale (RAS) and its sub-dimensions and the comparison of these scores according to the independent variables are presented in this section.

The general average score of the special education teacher candidates was found to be 70.38 out of 84 total points determined for the related scale. As the average scores for the RAS of the candidates associated with the subscales were examined, average scores of 18.76 for the subscale of the “Attitudes toward Recycle”, 31.56 for the subscale of the “Attitudes toward Reduce and Reuse” and 20.06 for the subscale of the “General Recycling Attitude” have been obtained. The average scores of the students’ attitudes obtained for RAS and its subscales are presented in Table 3.

Table 3. Recycling Attitudes of Prospective Special Education Teachers

Sub-dimensions	N	Item number	Mean	SS	Max	Min
Attitudes Toward Recycle (ATR)	120	6	18,76	3,05	24	13
Attitudes Toward Reduce and Reuse (ATRR)	120	9	31,56	3,17	36	22
General Recycling Attitude (GRA)	120	6	20,06	2,93	24	11
Total (RAS)	120	21	70,38	7,12	84	53

When the averages of pre-service teachers' attitudes towards the recycling are evaluated according to their grade levels, it is seen that the mean of the candidates studying in the 1st and 2nd grades is below the general average ($X = 70.38$), and the attitude scores of the candidates studying in the 3rd and 4th grades ($X_3 = 69.95$, $X_4 = 72.26$) is above the general average (Table 4). On the other hand, when the scores of attitudes towards the recycling are evaluated according to the age variable, it is seen that the scores of attitudes towards the recycling increase as the age of the teacher candidates increases (Table 5).

Table 4. Recycling Attitude Levels According to Gender and Class Levels

		Class											
		1			2			3			4		
		N	X	SS	N	X	SS	N	X	SS	N	X	SS
Gender	G	20	69,27	7,1	16	70,59	7,9	18	70,49	7,0	26	73,58	6,6
	B	7	67,91	6,6	9	68,55	7,3	6	69,01	6,2	8	71,59	11,0
Total		27	68,66	7,3	25	69,73	7,5	24	69,95	7,3	24	72,26	10,7

Table 5. Recycling Attitude Levels According to Ages

Age	N	X	SS
17-19	36	69,98	6,62
20-22	61	70,88	7,66
23-26	23	72,16	9,25

The t-Test results, which were conducted to compare the recycling attitude scores of special education teacher candidates according to the data obtained from the RAS, according to gender, showed that there was statistically significant difference between the candidates in terms of this variable ($p < 0.05$) (Table 6).

Table 6. t-Test Analysis of RAS According to Gender

Gender	N	X	SS	sd	p
G	90	71,98	9,68	119	0,06
B	30	68,26	5,95		

One-way ANOVA was applied to test the difference between the mean scores of special education teacher candidates regarding their attitudes towards the recycling according to grade level. The results of the analysis show that there is no statistically significant difference between the classes in terms of attitude towards the recycling ($p>0.05$) (Table 7).

Table 7. ANOVA Analysis of RAS Scores According to Class Levels

Source	Sum of Squares	df	Mean Square	F	P	Sig.
Between Groups	11122,709	119	169,189	1,658	,195	-
Within Groups	425,241	1	258,896			
Total	12507,973	121				

One-way ANOVA was applied to test the difference between the mean scores of special education teacher candidates' recycling attitude scores according to age level. Analysis results show that there is no statistically significant difference between age groups in terms of attitude towards the recycling ($p>0.05$) (Table 8).

Table 8. ANOVA Analysis of RAS Scores According to Age Levels

Source	Sum of Squares	df	Mean Square	F	P	Sig.
Between Groups	119,709	119	91,149	1,865	,169	-
Within Groups	333,241	1	165,160			
Total	12507,973	121				

DISCUSSION

The aim of the study was determined as determining the attitudes of teacher candidates, who are thought to make significant contributions to environmental education and the solution of environmental problems, towards recycling, which is one of the most important strategies for the protection of natural resources and to compare these attitudes according to variables such as education level, gender and age. For this purpose, a 4-point Likert-type Recycling Attitude Scale (RAS) consisting of 21 items developed by Ugulu[1] was used as a data collection tool. According to the results of the research, when the mean attitudes of the pre-service teachers towards the recycling are evaluated according to their grade levels, it is seen that the attitude scores of the pre-service teachers studying in the 3rd and 4th grades are slightly higher than the averages of the candidates studying in the 1st and 2nd grades. However, when the scores of attitudes towards the recycling are evaluated according to the age variable, it is seen that the scores of attitudes towards the recycling increase as the age of the teacher candidates increases.

As a result of the statistical comparison of the attitude scores of the teacher candidates participating in the study towards RAS according to the independent variables of the research, it was concluded that the difference between the averages was not significant in terms of grade level and age variables, but was significant in terms of gender ($p>0.05$). Lorgunpai and Lertchaiworakul[9], as a result of their study with university students studying in Sweden, determined that the attitudes of students towards recycling and separation of solid waste did not differ according to gender. This result of the study does not coincide with the findings of this study.

As a result of the researches, it is seen that recycling practices are carried out in many institutions (schools, municipalities, government offices, etc.) in Turkey[10-13]. However, it has been observed that there are problems in the adequacy and continuity of these practices. In particular, it has been concluded that the concept of "Recycling" is understood by individuals as "Recycle", which is only one of the components of the 3R model, but the concepts of "Reduce" and "Reuse", which are at least as important as "Recycle", are not known enough [14-17]. Undoubtedly, one of the basic needs, in order to eliminate such deficiencies regarding the environment in individuals, is to raise awareness of the responsibilities of individuals who are effective in the emergence of environmental problems. For this reason, a successful environmental education should be carried out at every stage of education in every country. However, international studies on environmental education have shown that the education level where individuals can receive environmental education most efficiently is secondary education. In order to raise environmentally sensitive individuals through education, it is necessary to first determine the level of knowledge, awareness and attitude of students towards the environment and then develop

them. It can be said that the more positive attitudes individuals have towards the environment, the less environmental problems will be. Therefore, the attitudes of teachers and students towards their environment should be measured and educational practices that will change these attitudes positively should be included.

REFERENCES

- [1] Ugulu, I. (2015). A quantitative investigation on recycling attitudes of gifted/talented students. *Biotechnology & Biotechnological Equipment*, 29: 20-26. <http://doi.org/10.1080/13102818.2015.1047168>
- [2] Omran, A., A.O. Gebril. 2011. Study of household attitude toward recycling of solid wastes: a case study. *Acta Technica Corviniensis* 4: 79-82.
- [3] Ehrampoush, M.H., and B. Maghadam. 2005. Survey of knowledge, attitude and practice of Yazd of medical science students about solid waste disposal and recycling. *Iranian Journal of Environmental Health Science and Engineering* 2, no. 2: 26-30.
- [4] Goodrum, D., M. Hackling, and L. Rennie. 2001. The status and quality of teaching and learning of science in Australian schools. Research report. Training and Youth Affairs. <http://www.dest.gov.au/NR/>. Accessed 14 Oct 2008.
- [5] Bennett, J., F. Lubben, and S. Hogarth. 2007. Bringing science to life: a synthesis of the research evidence on the effects of context-based and STS approaches to science teaching. *Science Education* 91, no. 3: 347-70.
- [6] Akçamete, G. (2015). Türkiye'de Özel Eğitim. Özel Eğitim içinde, yazar Süleyman Eripek, 197-206. Eskişehir: Açıköğretim Fakültesi Yayınları, 1998.
- [7] Ugulu, I. (2013). Confirmatory factor analysis for testing validity and reliability of traditional knowledge scale to measure university students' attitudes. *Educational Research and Reviews*, 8 (16): 1399-1408.
- [8] Ugulu, I., Sahin, M., & Baslar, S. (2013). High school students' environmental attitude: Scale development and validation. *International Journal of Educational Sciences*, 5(4): 415-424.
- [9] Lorgunpai, S., and J. Lertchaiworakul. 2010. Understanding the attitude of Thai students in Sweden toward recycling system: a study of container deposit system. Master diss., Mälardalen University, Sweden.
- [10] Ugulu, I. (2009). Determination of retention of students knowledge and the effect of conceptual understanding. *Biotechnology & Biotechnological Equipment*, 23(1): 14-18.
- [11] Ugulu, I., Akkaya, Z. & Erkol, S. (2013). An investigation on environmental attitudes of gifted students and the assessments in terms of some demographic variables. *NWSA-Education Sciences*, 8(4): 400-410. <http://dx.doi.org/10.12739/NWSA.2013.8.4.1C0595>
- [12] Ugulu, I. (2015b). Development and validation of an instrument for assessing attitudes of high school students about recycling. *Environmental Education Research*, 21(6): 916-942. <http://doi.org/10.1080/13504622.2014.923381>
- [13] Ugulu, I. (2019). Efficacy of recycling education integrated with ecology course prepared within the context of enrichment among gifted students. *International Journal of Educational Sciences*, 26(1-3), 49-58. <https://doi.org/10.31901/24566322.2019/26.1-3.1086>
- [14] Ugulu, I. (2020). Gifted students' attitudes towards science. *International Journal of Educational Sciences*, 28(1-3). 7-14. <https://doi.org/10.31901/24566322.2020/28.1-3.1088>
- [15] Yorek, N., Aydin, H., Ugulu, I., & Dogan, Y. (2008). An Investigation on Students' Perceptions of Biodiversity. *Natura Montenegrina*, 7 (3), 175-184.
- [16] Yorek, N., Ugulu, I., Sahin, M. & Dogan, Y. (2010). A qualitative investigation of students' understanding about ecosystem and its components. *Natura Montenegrina*, 9 (3): 973-981.
- [17] Yorek, N., Ugulu, I., & Aydin, H. (2016). Using self-organizing neural network map combined with ward's clustering algorithm for visualization of students' cognitive structural models about aliveness concept. *Computational Intelligence and Neuroscience*, Article ID 2476256, 1-14. <http://dx.doi.org/10.1155/2016/2476256>